

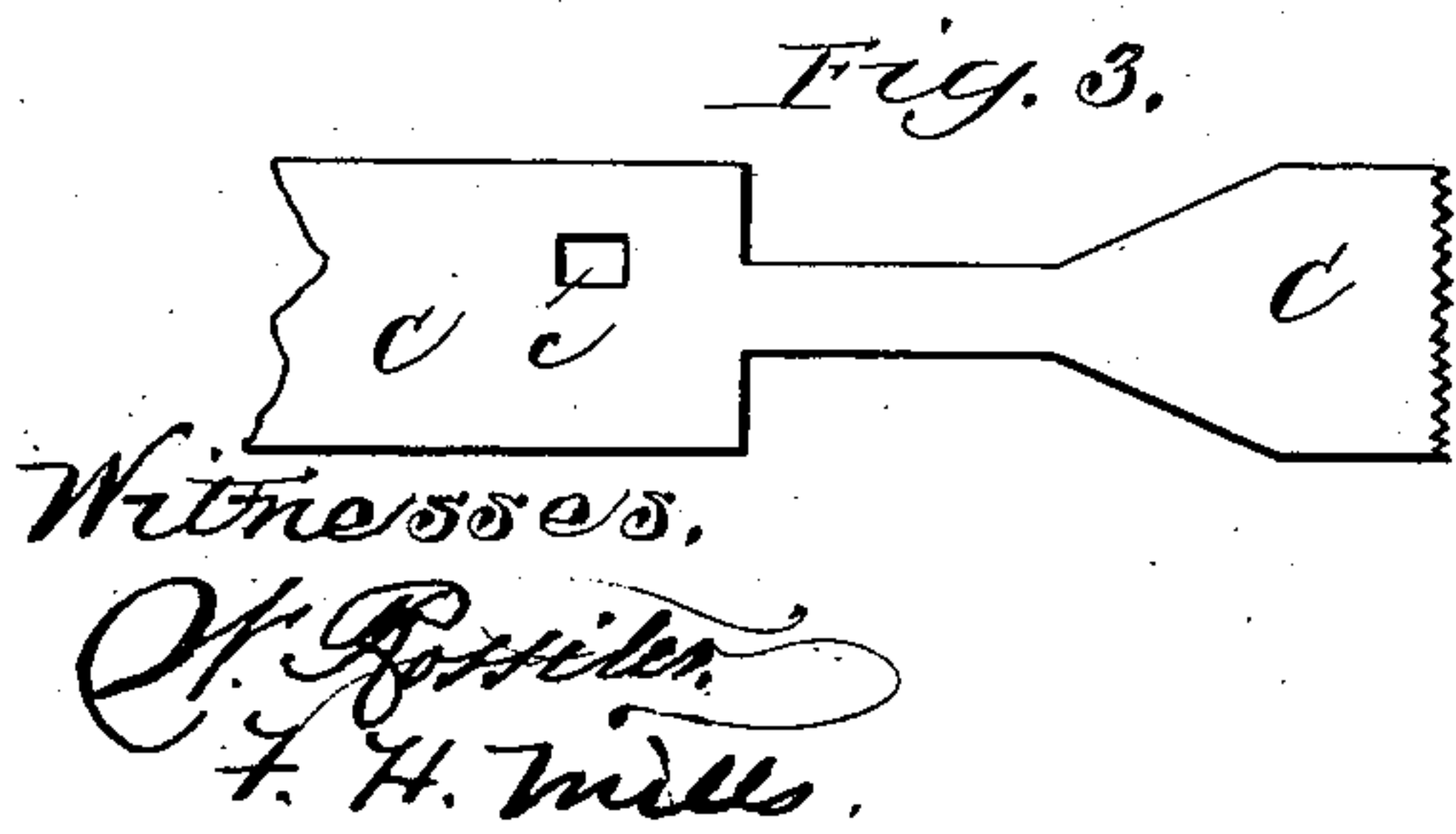
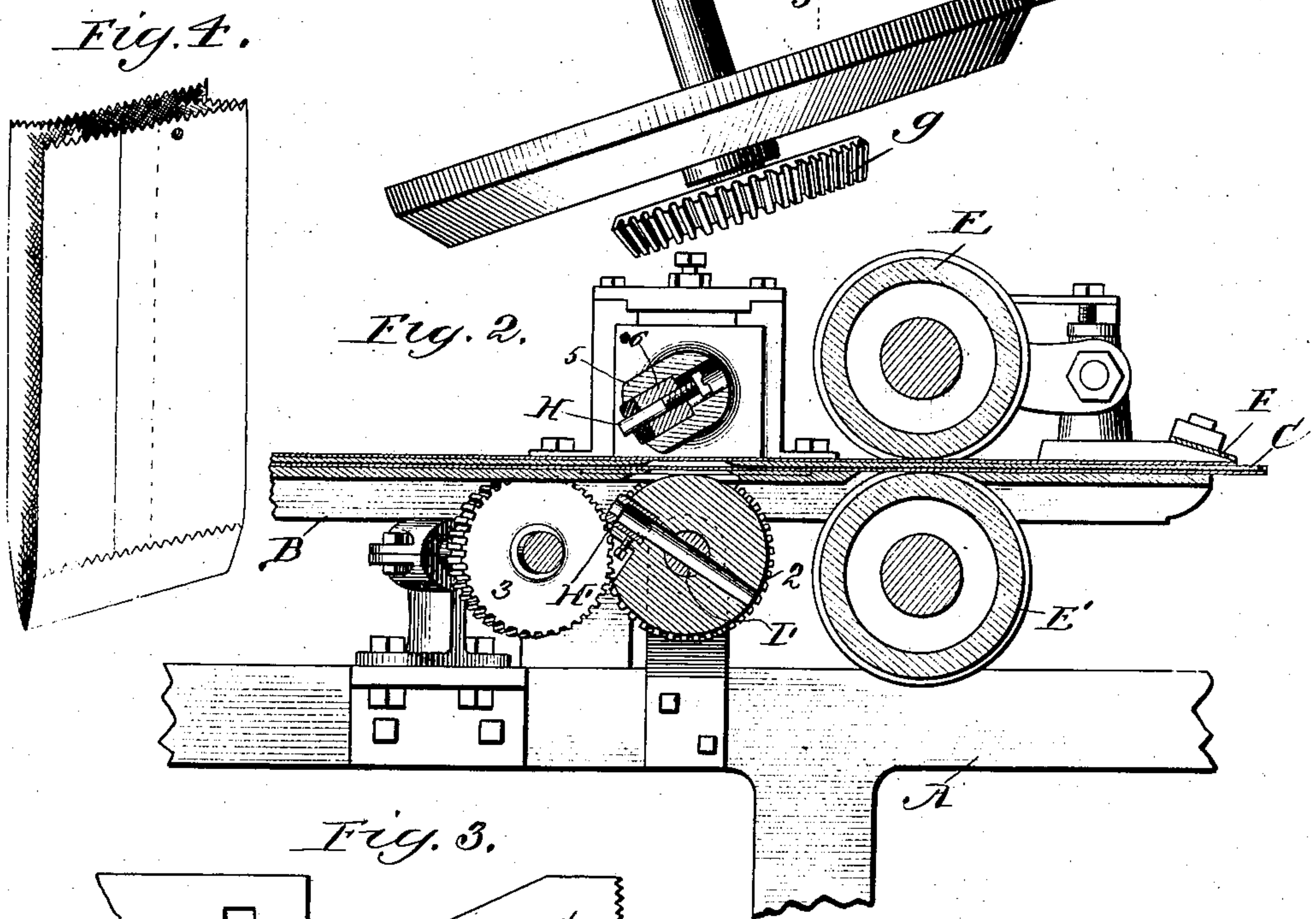
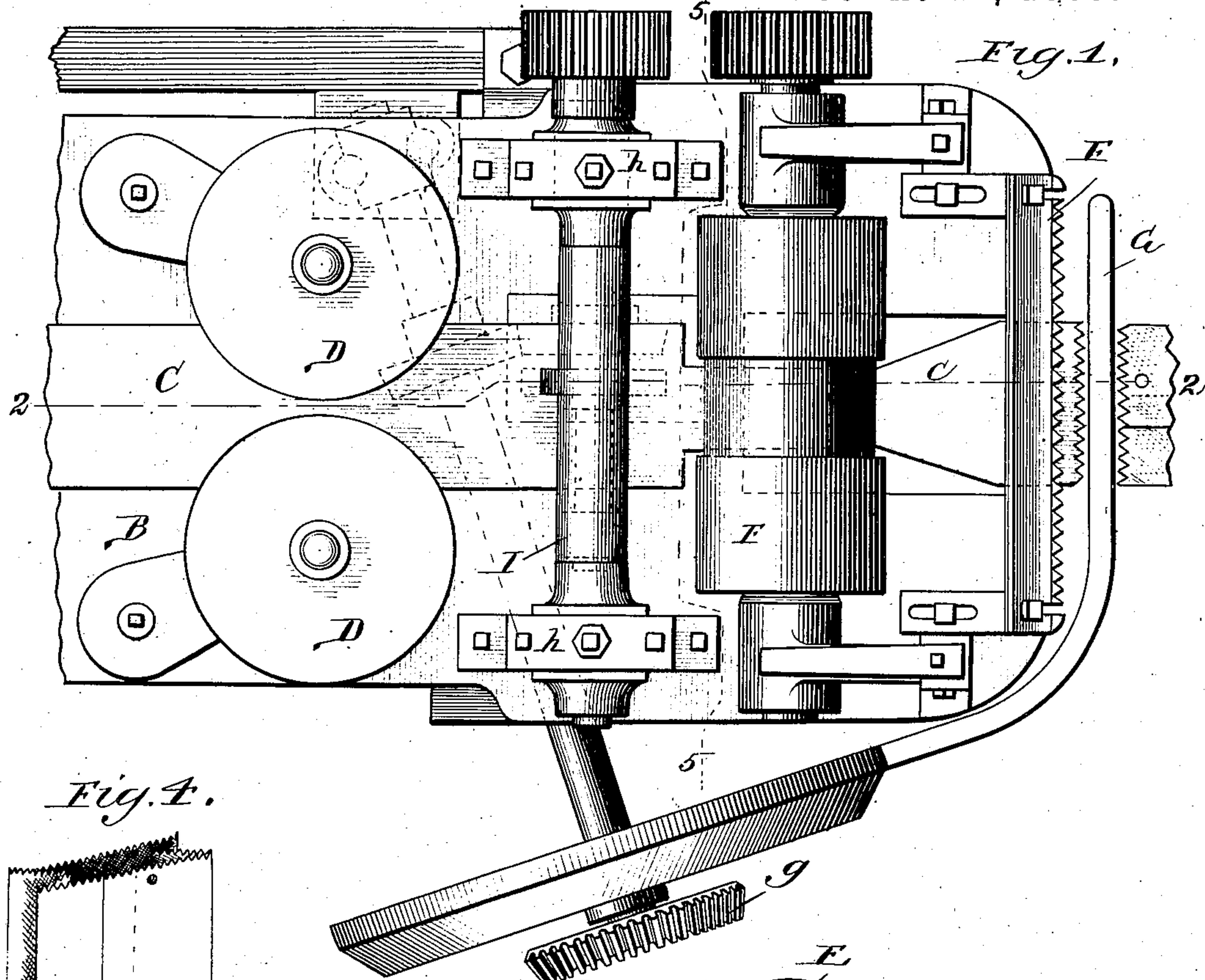
(No Model.)

2 Sheets—Sheet 1.

A. C. GETTEN.
PAPER BAG MACHINE.

No. 405,308.

Patented June 18, 1889.



Inventor/
Albert C. Getten
By R. C. Fisher
His Atty

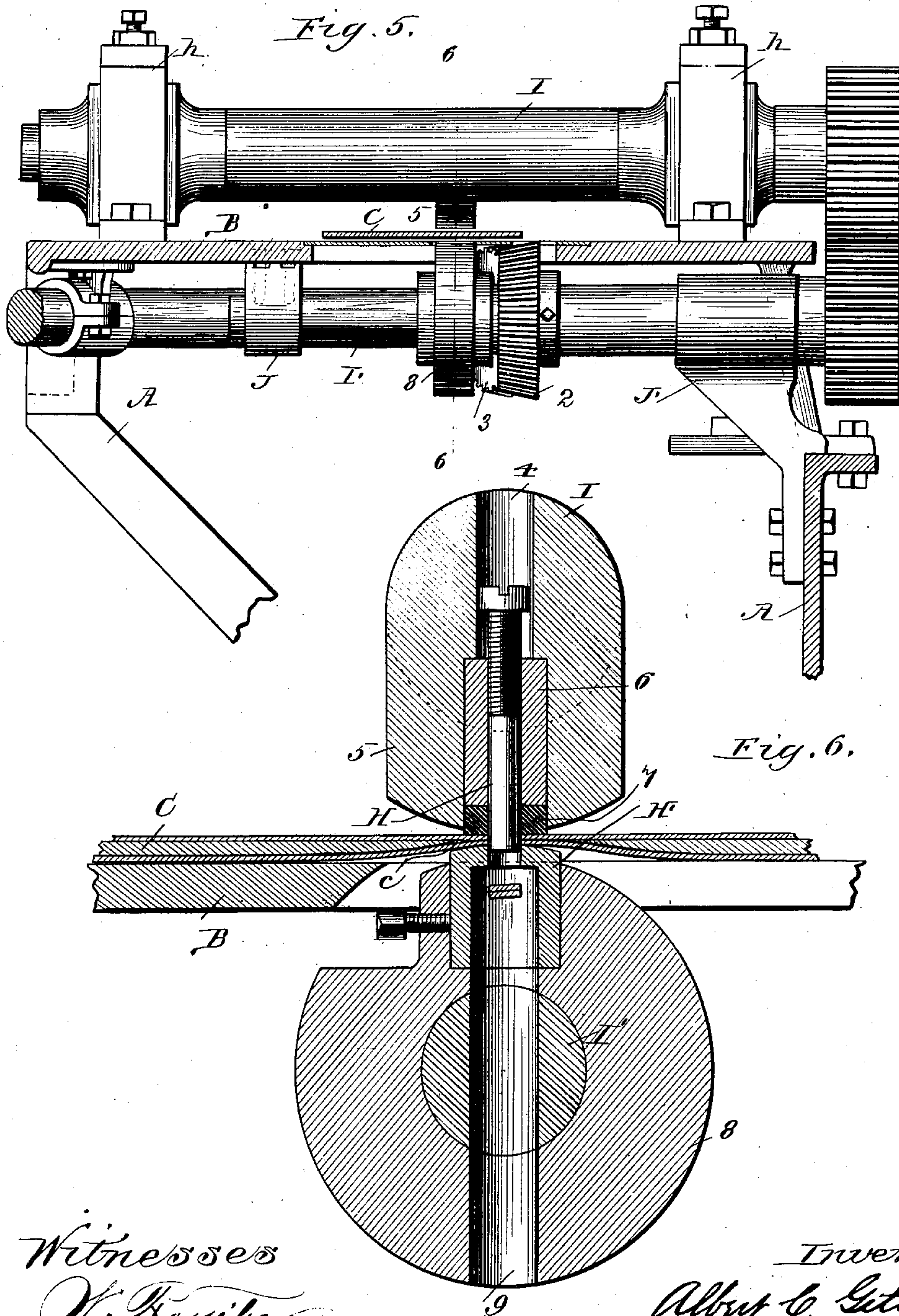
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UNITED STATES PATENT OFFICE.

ALBERT C. GETTEN, OF CHICAGO, ILLINOIS.

PAPER-BAG MACHINE.

SPECIFICATION forming part of Letters Patent No. 405,308, dated June 18, 1889.

Application filed August 13, 1888. Serial No. 282,549. (No model.)

To all whom it may concern:

Be it known that I, ALBERT C. GETTEN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Paper-Bag Machines, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

A great desideratum with retail dealers and other users of paper-bags is some means whereby the mass or package of bags can be conveniently held in such manner and position that single bags can be quickly taken therefrom without disarranging the package. Appreciating this need, my present invention has for its object to provide a paper-bag machine with means whereby the bags, as they pass in finished condition from the machine, shall each be furnished, at the same point with respect to and adjacent its open end, with a perforation or cut-away space, so that after the bags have been bunched together these perforations will be coincident, in order to permit a suitable sustaining cord, rod, or wire to be passed through the perforations to conveniently hold a number of bags together and yet allow one or more to be readily removed without disarranging the others.

To this end my invention consists in the novel features of construction hereinafter described, illustrated in the accompanying drawings, and particularly defined in the claims at the end of this specification.

In the annexed drawings my invention is, for convenience, illustrated in connection with a paper-bag machine of the type illustrated in Letters Patent granted to C. B. Stillwell, September 20, 1887, and numbered 370,099; but it will be readily understood that it is applicable also to a variety of other machines.

Figure 1 is a plan view of a portion of a paper-bag machine having my invention applied thereto. Fig. 2 is a view in vertical longitudinal section on line 2 2 of Fig. 1. Fig. 3 is a view of a portion of the former detached. Fig. 4 is a perspective view of a finished bag, showing the preferred location of the perforation. Fig. 5 is a view in vertical transverse

section on line 5 5 of Fig. 1. Fig. 6 is an enlarged view, in vertical transverse section, on line 6 6 of Fig. 5.

A designates the main frame of the machine, above the table or bed B of which is sustained the former C, which, in conjunction with the forming disks or wheels D, serves to fold the web of paper lengthwise as it passes to the final folding apparatus. (Not shown.) The former C extends between the feed-rolls E and E', and its serrated edge terminates slightly beyond the fixed cutting-blade F, and with this blade and the rotary cutting-blade or striker G co-operates in severing the folded tube into suitable lengths to form the finished bags. The shaft G of the cutting-blade or striker extends obliquely across and beneath the bed of the machine and receives its rotation from the miter gear-wheel g, the speed of which is changed according as it is desired to vary the length of the bags.

The general construction and operation of the parts as thus far defined, and as well also their co-operation with the parts of the machine that have not been shown, are well understood by those familiar with this class of apparatus.

The web of paper is by means of the former C and forming-rolls D folded into proper tubular shape to form a bellows-sided bag, and the folded tube is severed into proper bag-lengths by the fixed and rotary cutting-blades and the serrated end of the former.

In order to provide each bag near its top with a perforation, through which a cord, rod, or wire may be passed, I preferably employ a punching mechanism consisting of rotary male and female dies. In the construction shown the male die H is mounted upon a shaft I, held in bearings h above the table and the former C, and the female die H' is mounted on the shaft I', that is sustained by hangers J and J', depending from the under side of the table and attached to the main frame, respectively. The shafts I and I' are geared together, as shown, and are in gear with the rotary cutting-blade or striker, the speed of which with respect to the feed-rolls determines the lengths of the bags. I prefer to gear the shaft I with the oblique shaft of

the rotary cutting-blade or striker and to employ for this purpose suitable bevel-pinions 2 and 3, fixed, respectively, to these shafts.

My purpose in gearing the punching mechanism with the striker is to insure the accurate perforation of the paper adjacent the edge of the parts that are to form the open ends of the bags, and it will be seen that when the operation of the dies is once properly adjusted with respect to the striker G the dies will continue to perforate the paper at the proper points, it being only necessary to adjust the movement of the dies with respect to the striker when the speed of the latter is changed to form particular lengths of bags. This timing of the action of the dies with respect to the striker can be readily effected by the adjustment of the bevel-pinion 2 upon the shaft I (this pinion being adjustably held on the shaft by means of a set-screw) until the striker and the dies operate upon the paper at the proper relative times.

In order to enable the dies H and H' to co-act in perforating the paper, I provide the former C with a suitable space—as, for example, is shown at c—through which the dies can meet. This space c is preferably formed at such point and the dies H and H' are preferably so placed that the perforation of the paper shall occur through the body and between the folded sides of the tube and at one side of the pasted seam or lap, as seen in Fig. 1 of the drawings. My purpose in so placing the dies that they shall cut the paper at one side of the pasted seam or lap is not merely to avoid cutting through more than two thicknesses of paper, but also to avoid cutting through the paste and wet paper, which would interfere with the most effective action of the dies. My object, also, in so setting the female die H' that it shall project through the former C in the punching operation is to avoid all danger of stretching or separating the freshly-pasted seam of the folded tube, as would be apt to occur if the upper side of the tube were depressed in the punching operation.

In the particular form of punching mechanism shown, the shaft I, on which the male die is mounted, is provided with a hole 4, extending through it, and with an offset 5, in which hole and offset the die H is held by means of a seat-block 6, threaded to engage with the threaded lower portion of the die. My object in thus threading the rear portion of the male die is to enable the die to be readily adjusted from time to time to compensate for wear. Around the die H, I also prefer to place a rubber block 7, to enable the die to more certainly clear the paper after the perforation has been made therein. The shaft I', that carries the female die H', is shown as provided with a disk 8, through which and the shaft passes the transverse hole 9, from which the pieces punched out of the paper can readily fall.

It will be observed that the female die pro-

trudes from the edge of the disk 8 a sufficient distance to extend approximately through the former C, to meet the male die, the object of this construction being, as stated, to avoid any stretching or separation of the freshly-pasted seam that would be likely to occur if the male die in the punching operation forced the paper downward through the cut-away space of the former. It will be understood, however, that while I have described what I regard as the preferred form of punching mechanism, the precise details of construction may be varied within wide limits without departing from the spirit of my invention.

From the foregoing description it will be seen that as the web of paper folded in the direction of its length is fed forward between the dies H and H', the perforation of the paper will be effected, and the movement of these dies will be so timed with respect to the rotation of the cutting-blade or striker that the perforation of the paper will occur at a point adjacent the line of cut of the cutting-blade or striker and consequently adjacent the open end of each bag. One advantage incident to so gearing the punching mechanism that its movements shall correspond with that of the cutting mechanism is that a proper perforation of the paper adjacent the line of cut subsequently made is thereby secured; but a further advantage of thus gearing the punching mechanism is that the perforation of the paper is made while it is still in the web, whereas, if attempt were made to effect the punching after the bag-lengths had been cut, there would be serious danger of inaccuracy occurring in the position of the perforations, since in the final folding operations a slight variation in the movement of the severed lengths is of frequent occurrence.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a paper-bag machine, the combination, with suitable rolls for feeding the web of paper, a suitable former for folding the same, and a knife for cutting it into bag-lengths, of a punch for perforating the paper, said punch being located in position to perforate the paper adjacent, but entirely at one side of the line of the top edge of each bag, substantially as described.

2. In a paper-bag machine, the combination, with suitable rolls for feeding the web of paper, a suitable mechanism for folding said web—such as a former having a cut-away space—and a knife or striker for cutting the web into bag-lengths, of male and female dies located, respectively, on opposite sides of the former adjacent its cut-away space, and located, also, in position to perforate the paper adjacent, but entirely at one side of the top edge of each bag, substantially as described.

3. In a paper-bag machine, the combination, with suitable mechanism for feeding a

web of paper, of a former for folding said web, said former having a cut-away space, a female die located on one side of said former, a male die located on the opposite side of said former, shafts for said dies, and a cutting-blade in gear with said shafts, substantially as described.

4. In a paper-bag machine, the combination, with suitable mechanism for feeding a web of paper, of a suitable former having a cut-away space, and rotary male and female dies, the said dies and said cut-away space being located out of the line of travel of the pasted seam of the web of paper, substantially as described.

5. In a paper-bag machine, the combination, with suitable mechanism for feeding a web of paper, of a suitable former over which

said web is folded, and male and female dies located beyond the pasting mechanism, one of said dies being arranged to protrude through the former in the punching operation, whereby the stretching of the pasted seam is avoided, substantially as described.

6. In a paper-bag machine, the combination, with suitable mechanism—such, for example, as rolls, a former, and a knife—for feeding a web of paper and for folding the same and cutting the same into bag-lengths, of rotary male and female dies II and II', and shafts I and I', for carrying said dies, substantially as described.

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Witnesses:

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